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PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF AGRICULTURE

(LIVE STOCK BRANCH)

CARE AND MARKETING OF EGGS

BULLETIN No. 55

(SECOND EDITION)

THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA.

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
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DEPARTMENT OF AGRICULTURE,
VICTORIA, B.C., May, 1915.

Hon. W. J. Bowser.
Minister of Finance and Agriculture,
Victoria, B.C.

SIR,—I have the honour to submit herewith for your approval Bulletin No. 55 (2nd Edition), entitled "The Care and Marketing of Eggs," which has been compiled by H. E. Upton, Poultry Instructor.

In view of the rapid increase in the poultry industry throughout the Province, there is no doubt that the bulletin will be of material assistance to all engaged therein.

I have the honour to be,
Sir,
Your obedient servant,

WM. E. SCOTT,
Deputy Minister of Agriculture.

PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE

(LIVE STOCK BRANCH)

HON. W. J. BOWSER,
Minister of Agriculture.

WM. E. SCOTT,
Deputy Minister of Agriculture.

W. T. McDONALD, B.S.A., M.S., B.Sc.,
Live Stock Commissioner.

H. RIVE, B.S.A.,
Chief Dairy Instructor.

T. A. F. WIANCKO,
Dairy Instructor.

J. R. TERRY,
Chief Poultry Instructor.

H. E. UPTON,
Poultry Instructor.

WM. NEWTON, B.S.A.,
Soil and Crop Instructor.

H. O. ENGLISH, B.A., B.S.A.,
Soil and Crop Instructor.

H. E. WALKER, B.S.A.,
Agriculturist.

S. F. DUNLOP, B.S.A.,
Assistant Agriculturist.

A. KNIGHT, V.S.,
Chief Veterinary Inspector.

W. W. ALTON, V.S.,
Veterinary Inspector.

B. R. ILSLEY, V.S.,
Veterinary Inspector.

S. A. K. WHITE, V.S.,
Veterinary Inspector.

M. SPARROW, V.S.,
Veterinary Inspector.

D. H. McKAY, V.S.,
Veterinary Inspector.

W. T. BROOKES, M.R.C.V.S.,
Veterinary Inspector.

WM. J. BONAVIA,
Secretary to the Department.

Runs and fences are necessary where perfect egg quality is wished.

CARE AND MARKETING OF EGGS.

By H. E. Upton, Poultry Instructor.

INTRODUCTION.

THE following bulletin publishes remarks and some conclusions drawn to date by the writer in relation to the existing conditions of the egg market between the producer and the consumer of eggs in the Province. The writer has not gone into the question from the wholesaler's side, for certain reasons, so much as from the standpoint of the producer and the consumer.

It has been stated on one side that British Columbia eggs are scarce, and from the other side we hear the remark that the producer cannot sell his eggs at a decent marketable price in comparison to the retail price quoted. The fault lies in more than one direction. The main reason why the producer cannot sell eggs supposed to be No. 1 quality is due to the fact that there is no form of standardization.

The market-man or grocer will not take eggs oftentimes unless they are given in trade for his stock. Such methods are not businesslike in any case, ignoring the fact that the handler secures a profit, first, on the stock given in trade, and, again, on the eggs when they are sold. Still, this same grocer has that right if the eggs brought to him are taken irrespective of the real value. This is due to the fact that nothing ensures him that those eggs are first-class. The consumer, not knowing one egg from another, shows this lack of knowledge when he accepts whatever is given for fresh eggs.

Complaints have been not at all infrequent during the past season relating to the price of eggs being lower than in previous years. Of course, poor seasons will have more or less effect on the price of eggs, as with other commodities. People on the Coast and Lower Mainland districts should be able to make a good profit on their egg business if they are sold on a yearly average of 32 to 34 cents per dozen, providing their ranch is run on a business basis. With the increased number of poultry being grown in this Province, as also in the adjoining States that compete for our markets, one cannot expect the same prices to exist that were prevailing a few years ago. We doubt if the price will ever drop below the 32-cent average figure, however.

Prices on some Eastern markets have averaged 35 cents the dozen within a few years. The following season will see eggs at a premium in the West. During 1910 and 1911, 31½ and 32 cents respectively were obtained from one of the big Eastern markets. If these prices are secured when there is treble the competition, with only a fair standard of grading, it seems feasible that poultrymen in this Province and throughout the Dominion have a grand chance to meet all competition if a good standard is made and legislation enacted to demand all eggs being sold under the correct trade-name. First-class eggs will always command a high premium over the ordinary egg if consumers can be assured what they are paying for.

A few extracts from a circular entitled "A Movement to Increase the Production and Better the Quality of Canadian Eggs, Through the Adoption of an Improved System of Marketing," to show what Dominion poultrymen from the Rockies to the Atlantic Coast are doing, might be helpful here:—

"It is a matter of grave concern that the average commercial egg seen on the markets of Canada is of such poor quality. Much educational work has been done by the Federal and Provincial Governments with a view to improve the quality of

market eggs, but such work has been largely ineffective because of the fact that in the prevailing system of marketing no premium has been placed upon quality.

"It has been pointed out repeatedly that the 'case-count' system of buying eggs has been largely the cause of the general unsatisfactory condition of the trade.

"For many years eggs have been purchased by number without regard to quality. This has been decidedly unfair to the farmers and other producers who have taken pains to market good, clean, fresh eggs, and through placing no premium on good eggs the system referred to has really become an incentive to the continuance of careless and dilatory methods. It has made possible the disposal of eggs in all stages of decomposition, and has encouraged farmers and local buyers to hold eggs at certain seasons of the year when they have no satisfactory places for storing them.

"This whole subject has been thoroughly discussed at recent meetings of produce dealers of the Provinces of Ontario and Quebec. Officials from both the Federal and Ontario Departments of Agriculture were present at these meetings, and endeavoured strongly to present the imperative need of a radical change in the system of handling and marketing eggs.

"The following is a brief summary of what transpired at these meetings:—

"The Government officials pointed out that while the enormous loss and shrinkage apparent in the trade and the uncertain quality of eggs as received by the consumer was partly due to carelessness and negligence on the part of the farmer, yet he was not entirely to blame. The unsatisfactory condition of the trade is the fault of the system, rather than of those engaged in it. The evil lies in the fact that inferior eggs command as high a price as new-laid eggs, and absolutely rotten eggs are bought and sold in the same dozen as good eggs. It was emphasized that so soon as the dealers saw their way clear to unite in discriminating against an inferior product and in allowing a liberal premium for a superior product, the quality of market eggs would improve and bad eggs would be eliminated from the trade.

"Two methods of changing the system have been worked out in a number of places. The first and the most generally adopted is known as 'loss-off' buying, which consists of making deductions from the sum total of receipts for eggs which are bad and unfit for food. The second, which involves the grading of eggs and is referred to as 'quality payment,' consists of paying for each separate grade according to its real value. In the latter system there is constantly held out to farmers some effective inducement to produce and market eggs of the highest quality.

"'Quality payment' is certainly to be preferred to 'loss-off' buying, for the reason that it places a premium on the best quality of eggs. A premium paid to the farmer for eggs that would grade new-laid as contrasted with those that fall into lower grades would be of the utmost value in stimulating production and improving the quality of eggs as they leave the farm. It was repeatedly emphasized that there would be little inducement for the farmer to pay any particular attention to the question of quality in eggs until the dealers were ready to make a difference between the prices paid for good and bad eggs.

"The results of a recent experiment conducted by the Poultry Department of the Ontario Agricultural College were quoted to show that it would pay dealers to pay a premium for high-grade eggs. Certain cases of eggs of the very highest quality were put in storage and held in comparison with other cases of the best eggs secured from ordinary country receipts. The difference in quality at the expiration of the cold-storage period was very marked, so much so that it would at least have been more profitable to purchase the best grade of eggs used at 28 cents per dozen rather than average country receipts at 25 cents.

"It is evident, therefore, that the dealers who claim to be so desirous of securing quality eggs have in their own hands the most effective remedy for a large part of the trouble.

"The dealers in attendance at these meetings were not of one mind upon the question of 'quality payment' as a satisfactory solution of the difficulty. Opposition was offered on the ground that unless the practice of quality payment were made universal it would not be practicable, for the reason that the few who adopted it could not compete successfully with those buying on a case-count basis. On this point F. G. Urner, of New York, editor of the *New York Produce Review*, speaking recently at a meeting of the Southern Carlot Shippers' Association, said:—

"'That only when eggs are paid for at different prices, according to their real value, can there be any effective inducement for producers to market their eggs when fresh or to take proper care of them. . . . A good many packers say that the proposition of quality payment is all right in theory, but that it cannot be put in practice in any section unless done by all; that a packer cannot successfully institute quality payment so long as his competitors continue to buy case-count at an average and uniform price. I cannot believe that this is so if the candling is properly done and if so much difference is made in the paying price as the real value of the eggs justifies. When different packers are competing for goods from the same source of supply, it would seem inevitable that those who paid the full value for new-laid quality would attract such, as compared with those who paid an average price for good and poor together.'

"The stand was also taken by certain dealers that it would be difficult for country storekeepers to adopt 'quality payment' for the reason that farmers would take objection if any reduction in price were made on account of the presence of bad eggs. In this way the country merchant, thinking that he would possibly lose the patronage of some farmers, would therefore object to the system. It was thought that if some means were adopted by which farmers could be shown the exact quality of their eggs as they were marketed, this prejudice against the system would be easily overcome.

"It was also argued that, unless a simple and rapid system of candling were devised, it would be difficult at times for the country merchant to accurately determine the quality of eggs delivered. In reply to these points, the use of a large candling outfit similar to that which is used in Denmark was recommended. Such an outfit would permit of placing 120 eggs before the light at once. The process of candling would thus be made both easy and rapid.

"A report was received of the progress of a similar movement in the State of Michigan. It was shown that within an incredibly short time the system of 'quality payment' had gained wonderful progress. Those who had taken it up in that State declare most emphatically that it would be a mistake to go back to the original case-count method. Their experience has proven, contrary to their former ideas, that 'quality payment' was gladly accepted by the producers. The dealers also found it much more satisfactory to conduct their business by following such a system. They were convinced that it would be a matter of only a short time until it would be adopted throughout the entire State.

"At the conclusion of the last meeting it was moved that the association of dealers adopt, after June 1st, 1913, three grades in purchasing eggs, viz.:—

"New-laids—Eggs which are sound, full, sweet, and not more than five days old.

"Firsts—Eggs which are sound and sweet but having a limited shrinkage.

"Seconds—Eggs of inferior quality but not bad.

"It was further moved that the association petition the Government to enact legislation making it illegal to buy or sell bad eggs, and also to appoint official inspectors to enforce such legislation. The motion was received reluctantly and when put to the meeting was lost.

"*It was then moved that the members of the association agree to purchase all eggs after June 1st, 1913, on a 'loss-off basis'; that is, to pay absolutely nothing for bad eggs. This motion carried and was supported by all the dealers present.*"

It is plainly noticed by all producers and wholesalers that our egg market, up to the time the above circular was printed, calls for great improvement. In British

Columbia, our problems are a little different from those in the far Eastern Provinces. At the same time, the material relating to "loss-off" buying is what we require to strengthen all our markets.

Basket of eggs as generally exhibited in stores—all ages, all sizes, all colours, clean, dirty, cracked, and broken. A basket of fertile eggs placed in the sun for about six hours at a temperature exceeding 70 degrees will start germinating. Eggs for sale should be kept in shaded parts of store or dry cellar, and cards inserted in window announcing the fact.

One-dozen cartons. These are of cardboard and cost in some localities from $12 to $16 per thousand, the latter price including printing.

Meetings have been held lately in relation to the egg business, and it is expected by the Canadian dealers that the "free egg-case" system which dealers intend to bring in force in January, 1916, will greatly advance the buying of eggs on the "loss-off" basis.

HOW TO BETTER CONDITIONS.

This movement throughout the whole Dominion to better the egg-market conditions is warmly endorsed by the British Columbia poultrymen. All are in favour of having a "Marks Act" established to prevent storage and held eggs being sold as fresh and new-laid.

To prove that such things exist, the writer purchased a dozen eggs called "Special"—"New-laid Eggs 30 cents a dozen to-day." At the same time the International Egg-laying Contest eggs were bringing 55 cents a dozen on the retail market. The bought eggs were candled, and the results follow:—

In each egg, 20 per cent. evaporation; contents not firm, and dark ring around air-cell.

Two eggs watery (often termed buttermilk eggs). Fair boiling eggs.

Results.—As a sample of storage eggs these were quite good, but surely do not deserve the name of new-laid. They were well-selected or No. 1 grade of storage eggs.

The average poultryman tries hard to put a good article on the market, yet if this article will not be recognized as such—no law enactments requires such acknowledgment at the present time—how can the poultryman be encouraged to produce the best?

This Division has also given several demonstrations to the public in different parts of the Province to prove to the producer that candling was a necessity, and to convince the consumer that an egg is not always a good egg.

In an Okanagan town we purchased ½ dozen eggs sold as "case eggs" at 40 cents per dozen, while eggs from the farm daily retailed at 60 cents per dozen. With this lot two eggs had spot-rots and all six eggs showed 6 to 8 per cent. evaporation. The contents were not firm in the other four.

Another lot was purchased at an inland town, sold under a favourite brand adopted by the wholesaler. This dozen was good storage eggs and the contents fairly firm. Yet the evaporation was so great that by buying twelve eggs or, one might say, egg-shells, the consumer would obtain equal to the contents of only eleven eggs were they only between seven and twelve days of age.

Several other instances could be cited to show that the consumer loses in many cases, though we must state that the quality of eggs from the producers has greatly improved in this Province during the last twelve months.

Some have the idea that the real food value of an egg is just as high, even if all this evaporation has taken place, owing to the fact that it is only water which evaporates. Yet experiments seem to show that the contents break down to some extent by the evaporation and the time they are stored; hence there must be some loss of food value in eggs while the evaporation is going on.

Both producer and farmer could better themselves by paying more attention to their flocks and keeping them in a more sanitary condition.

Several editions of circulars have been distributed in the Province during the past three years relative to egg-circle work. Amongst them was one outlining rules which were necessary for any association to follow if they wished the best results from marketing their eggs.

The wholesalers and retailers both could sell more eggs if they were not somewhat reluctant to state the exact kind of article they are selling. It is only business to these people, but the extra cents mean dollars to the producers. When a dozen eggs called "new-laid," bearing a "special" notice at the top of the card, can be sold for 30 cents a dozen on the retail market, the consumer should know—if the best eggs at that time are bringing 55 cents per dozen—that these eggs were inferior

quality. Yet the "special" draws the eye to the article. If one were to look carefully, as did the writer, at these eggs, no bloom or fresh appearance could be found on the shell as one finds on the shell of a new-laid egg unless it has been washed off.

EGG CIRCLES.

In some Provinces, especially in Prince Edward Island, great strides have been made in egg-circle work. The following constitution and by-laws might be helpful to any association endeavouring to put egg-circle work on a sound basis:—

PROPOSED CONSTITUTION AND BY-LAWS.

.....EGG CIRCLE NO.....

(Place)..... *(Province)*.....

Adopted.....

CONSTITUTION.

1. The Egg-selling Association has for its object the increasing of profits to poultry-raisers by co-operation.
2. The Association seeks to attain its object—
(a.) By marketing eggs of the best possible quality; and
(b.) By selling the eggs delivered by the members at the highest possible price.
3. The annual meeting of the Association shall be held in the month of March of each year.
4. Notice of the annual meeting shall be given each member by the Secretary not less than one week previous to the date of this meeting.
5. Special meetings may be held at any time upon call of the President by written notice mailed to each member five days before the meeting. Special meetings shall be called by the President whenever required to do so, in writing, by any ten members.
6. At the annual meeting a Board of seven Directors shall be elected, of whom three shall constitute a quorum at any Board meeting.
7. The officers shall consist of a President, Vice-President, and Secretary.
8. The President and Vice-President and Secretary shall be chosen by the Directors from among themselves at the first Board meeting after the annual meeting.
9. The Directors may select three of their number to act as an Executive Committee (the Presid to serve as Chairman) to have general charge of the affairs of the Association.
10. At the annual meeting two Auditors shall be elected.
11. All the elections shall be by ballot, conducted by two scrutineers appointed by the Chairman, plurality electing.
12. The Board of Directors shall emplo; a Business Manager who shall also act as Treasurer of the Association. The Business M nager shall not be a member of the Board of Directors.
13. The President shall preside at all meetings. He shall call meetings of the Board and members when necessary, and shall advise with and render such assistance to the Manager as may be in his power. In his absence the Vice-President shall have and exercise all rights and powers of the President.
14. The Secretary shall keep a record of the proceedings of all meetings and of all receipts and disbursements, and report the condition of the finances annually or as often as the Directors shall desire. The Secretary may, on approval of the Board of Directors, employ an assistant to help him in his work.
15. When a vacancy shall occur through any cause in any of the offices established by the Constitution and By-laws of the Association, it shall be filled at the next regular or special meeting of the Board of Directors.
16. This Constitution or any part thereof may be amended at any regular or special meeting by a two-thirds vote of the members present.

BY-LAWS.

1. The Manager shall have charge of the business in detail under the direction of the Board of Directors.
2. The remuneration of the Manager shall from time to time be fixed, and may be by way of salary or commission.
3. Members of the Association are subjected to the following regulations:—

(*a.*) They must deliver all eggs not to be used for their own housekeeping or breeding purposes at a time and place determined by the Board of Directors. All eggs must be unbroken, clean, fresh, of good size, and not more than one week old:

(*b.*) Before being delivered all eggs must be stamped at the broad end with the stamp supplied by the Board of Directors. The stamp is the property of the Association and must be returned to the Manager when membership ceases:

(*c.*) Only false eggs of gypsum, china, etc., may be used as nest-eggs:

(*d.*) Poultry-houses must be kept clean and sanitary:

(*e.*) Eggs must be gathered at least twice a day and kept in a clean room free from draughts, dampness, and foul odours, and if possible in a temperature not exceeding 60° Fahr.:

(*f.*) Male birds should not be allowed in pens of fowls the eggs from which are to be handled by this circle. Eggs will be classed as fertile when the male has been with the females for four days and for two weeks after the male has been removed.

4. Membership may be obtained by all poultry-keepers living in the vicinity of upon payment of an entrance fee of cents. Only those will be admitted who will strive to promote the aims of the Association and whose applications are accepted by the Board of Directors.

5. In case the members do not observe the rules of the Association, a system of fines may be adopted and enforced by the Directors.

6. These By-laws may be amended at any regular or special meeting by a two-thirds vote of the members present.

SELLING WHOLESALE.

Although there are many cases of storage eggs coming on our markets weekly, there are very few produced in the Province that are purchased with the intention of being stored, to the writer's knowledge, for any length of time.

If eggs are purchased with this intention, the buyer candles them very closely and eliminates all eggs which should not be placed in storage. This process of elimination is known to the handler of eggs as purchasing on a "loss-off" basis. Many eggs are so handled by large packing and storage houses. A law enacted in the State of Kansas prevents the selling of eggs unfit for food, and the dealers of eggs have agreed to buy on a *loss-off basis*. It is to be hoped that *all* persons handling eggs in British Columbia will see their way clear to do the same thing.

STANDARDS AND GRADING OF EGGS.

At the present time (July, 1913) one alone cannot advocate the correct system which should be adopted for grading eggs sold in British Columbia. The poultrymen themselves should lend their co-operation on this subject.

The system of grading, if such it may be called, in vogue at this time is very indefinite, and nothing guarantees any one producing, buying, or selling eggs as to their real value.

The display cards attached to eggs as placed before the public usually bear the following inscriptions:—

"New-laid Eggs."
"Special Eggs."
"Strictly Locals."
"Guaranteed Strictly New-laid."
"Pullets' Eggs."
"Strictly Fresh Eggs."
"Guaranteed Fresh."
"Fancy Eggs."
"Good Boiling Eggs."
"Good Cooking and Frying Eggs."
"Guaranteed Local Fresh."
"Ranch Eggs."
"Eastern Eggs."

"Good Eggs."
"Eggs."
"Tested Eggs."

Yet the writer has not noticed labels displayed by retailers stating that some of these eggs were of Chinese origin.

It has been stated that there are over fifty brands of eggs sold in Canada. The writer has counted as high as eighteen brands in one day in Vancouver, besides the several local brands that are sold. This certainly proves that our markets need to clean house and get started on the right road ere long.

A good standard for the best eggs may adhere to the generally adopted terms, as follows:—

"*Strictly Fresh Egg.*"—An egg which is guaranteed to be under seven days old, that has passed good under the candle, and is uniform in size, colour, cleanliness, and contents.

"*New-laid or Fresh.*"—An egg guaranteed to be not over seven days of age, and that has passed under the candle, also uniform in size, colour, cleanliness, and contents.

"*Seconds.*"—Eggs which are not over two weeks of age; that have been held in a proper place; that are free from blood and meat spots, clean, and perfectly edible.

Eggs which are "held," storage, or imported should not be placed on the market under the terms they are now sold under, but rather be given the terms—

"Cold storage."
"Held."
"Imported."

thus assuring the consumers what they pay for.

The following score-card is used at nearly all fall fairs and poultry-shows in this Province:—

DEPARTMENT OF AGRICULTURE OF BRITISH COLUMBIA.
LIVE STOCK BRANCH—POULTRY DIVISION.

SCORE-CARD FOR EGGS.

Scale of Points.	Possible Score.	Corrected Score.
1. Freshness	40	.....
2. Quality of contents	15	.....
3. Cleanliness and neatness of display	15	.....
4. Size	15	.....
5. Uniformity of shape and colour	10	.....
6. Texture of shell	5	.....
Total	100	.....

EXPLANATORY.

Freshness, wherever possible, to be determined by "candling." Eggs up to seven days old to be accounted fresh. Eggs seven days old have air-cell not larger than 10-cent piece.

Quality of contents determined by consistency and colour of yolk and albumen.

Neatness of display: Points to be deducted for unclean or soiled receptacles.

GENERAL DISQUALIFICATIONS.

Cracked, "glossed," cold-storage, packed, or case eggs, rotten, double-yolked, marked eggs, blood rings or spots.

NOTE.—Two eggs in each dozen will be broken by the Judge in judging.

Judge.....

And a deal of interest has been shown in the perusal of these cards after the eggs have been judged.

In days gone by eggs have been judged by looks and weight only, but by candling and scoring we find far better satisfaction is given and more educational value is received.

CARE IN KEEPING EGGS.

Hen-houses should be cleaned often, and lime or soil placed on the drop-boards.

Nests should have new straw placed in them monthly at least, and powdered sulphur placed in the corners to keep down lice, etc. If an egg be broken in the nest, the smeared straw or shavings should be removed and new straw put back. Nests should be roomy, dry, and clean. Hens oftentimes do not use the nest, due to the accumulation of mites and lice.

Eggs should be gathered twice daily, even more often in the extremely warm or extremely cold weather. One should place the eggs, after gathering, in clean boxes or wooden pails, in a dry, cool room, with a temperature of not over 60° nor below 45° Fahr.

Eggs displayed for consumption in direct rays of sun.

Double-yolked, large, dirties, small, and cracked, as also eggs found in places other than the regular nests, should not be classed with the normal eggs, but utilized at home or sold to neighbours as such.

Eggs should never be actually washed. If one prefers using a damp rag to remove slight traces of dirt, no harm will be done. Placing eggs in water and rubbing them with a rag breaks down the interior membrane, and causes deterioration quickly.

The average weight of a dozen eggs should not be less than 23 oz.

HOW EGGS ARE DAMAGED.

The flavour of an egg is that which makes it edible. Eggs displayed in windows with sun beating on them, in lemon-boxes, or next to fish, onions, or garlic, soon have their flavour destroyed by absorbing the strong odour. We find such practices exist on our own markets, as shown by the cut in this circular.

STAMPING EGGS.

Some associations have marketed their eggs under a trade-name, and individuals have marketed eggs under a special trade-mark, with only fair results. There are too many ways for the storage or held (pickled) egg to fall from their own basket into another under the present system to allow this practice to continue if better results are wished.

The theory that a stamp placed upon eggs would offset all difficulty of selling a good product has been cast away. This act of stamping did help producers for a very short time, but it has been found that some of the stamped eggs were placed in storage for a while when the price was low, then taken out when the market price was higher, and retailed as "Fresh Number One."

Again, it has been known where unscrupulous persons have secured stamps and used them on a poor-quality egg, selling them for a high-grade article.

Others have put eggs on the market in their own cartons, and have not stamped the eggs, relying on the carton to do the advertising. After the carton has advertised certain brands of eggs and built up a good trade for the retailer and the producer, the trouble begins. Persons have been known to collect the empty cartons and place other eggs, often storage, in them, retailing them under the name of the owner of the carton.

To obviate this, it is not a difficult matter for the poultryman, or, better, poultry association, to have a certain carton and seal of their own. The carton may be plain or decorated, as suits the association. The seal or sticker should be one which is out of the ordinary class, large enough to cover one-half the top of the carton and three-fourths of the side. The printing on this seal should mention the fact that, once this seal is broken, neither the association nor any of its individuals are responsible for the quality of eggs in the carton.

A difficulty may arise from this—people other than the association members may have seals made which resemble the association seal. To prevent any such fraud, the same seal may be used by all producers in British Columbia having the one seal made in a good design and copyrighted to prevent deception. The different associations may then have their own separate cartons, number of members, etc., on the individual's carton and eggs.

Such a practice, however, calls for the co-operation and hard work of each member of each and every association. It also calls for every egg sold by association members to pass in under the candle, if they desire to use such a seal and derive the benefits which are sure to come from the same practice if patience will be allowed to play its part.

CANDLING EGGS.

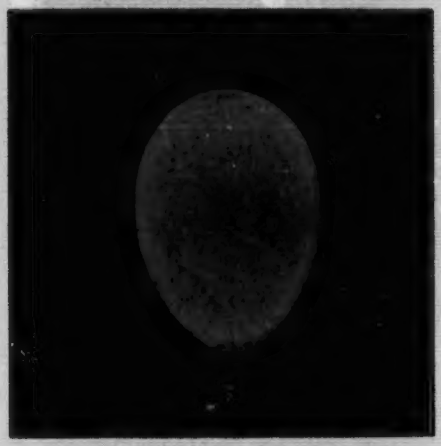
Of all food products purchased by consumers, there is probably none known so little of as the egg. If eggs are clean-looking, regardless of the price, they can usually be sold to some one. This should not be so, and until the consumers demand to know the contents of the shell the poultryman will never receive what he should for his products.

A type of candler which can be made to fit a lamp or electric bulb.

Eggs, being semi-transparent when held before light, allow, if carefully turned by the hand, any one to detect the quality of the contents or the defects and the amount of evaporation.

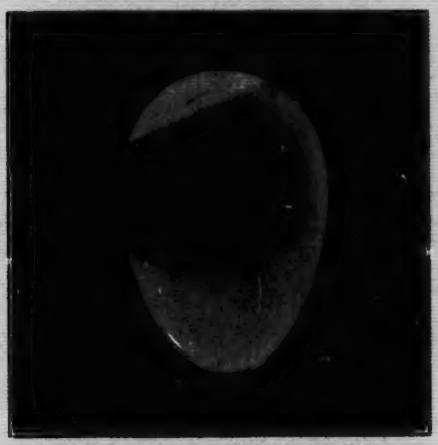
An extremely strong light is not necessary. The house lamp, gas-light, or common 16-candle-power electric bulb may be used for candling purposes. The electric bulb is used commercially in most instances. Many appliances have been sold during late years for candling, but they do not all allow an expert to do careful work.

The size of the air-cell showing evaporation, the consistency of the albumen (whether thick or thin), and the mobility of the yolk, in conjunction with the general appearance or transparency of the egg, are the factors looked to in determining the quality of eggs.



Cut showing appearance of a new-laid egg.

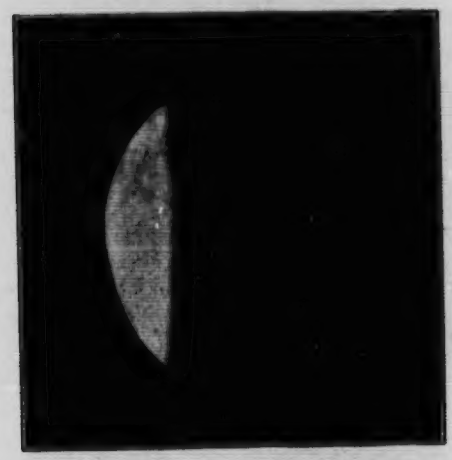
In the strictly fresh egg the air-cell is about the size of a Canadian 5-cent piece. The yolk is hardly recognized and it should move readily as the egg is turned around.



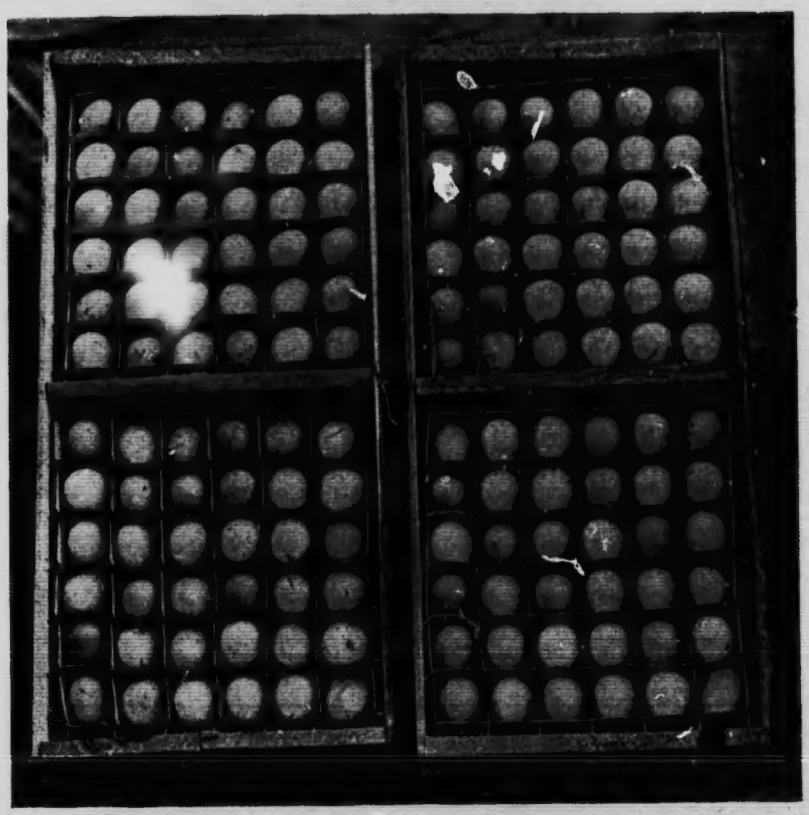
Cut showing a stale egg.

In the stale egg the air-cell will be much larger and very perceptible. If the egg has been kept in too warm a temperature, the air-cell will be very great owing to evaporation causing contraction of the contents. A decided staleness is also marked in the old egg. The contents of the stale egg become more and more of a watery consistency owing to osmosis.

A bad egg or an egg which has germinated or been incubated will be easily detected, it being dark under the candle.



Cut showing a bad egg.



Thirty-dozen egg-crates, as commonly used in the Province. When eggs are kept for any length of time in these crates, it is important to see that the cardboard fillers or partitions are dry and clean. Mouldy or damp fillers will deteriorate the eggs very quickly.

PRESERVING EGGS.

Although there are several who preserve eggs each year, we still find many people who desire knowledge of this practice. The best preservative in which eggs may be held for future use is what is known as sodium silicate, or water-glass. The following is the procedure of making the solution:—

Secure a good stone crock that is not cracked, with a cover which will fit tightly on the same. Purchase some water-glass, or sodium silicate, which usually comes at about 25 cents a pound, retail. Then boil a goodly amount of water, say twice as much as one would need to mix with the preservative, in a boiler, to kill all germs which might be harmful to the eggs. After the water has boiled well, set to one side, and allow it to cool to its normal temperature. When it has thoroughly cooled, one may mix ten times the amount of water to one of the water-glass. The eggs that one intends to preserve should be fresh and clean, free from cracks, and should be infertile. Eggs that are to be preserved should never be washed, as it breaks down the interior membrane of the egg. When the eggs are put in the crock, they should be placed in the liquid as gently and compactly as possible, and the top layer of eggs should be well covered by the solution. The crock should then be covered firmly and placed in a cool place.

When one wishes to utilize the eggs which have been preserved, they may be washed or wiped with a rag, unless one wishes to boil them. If the eggs are to be used for boiling, a small pin-hole should be pricked at the large end where the air-cell is situated.

LIST OF BULLETINS, ETC., ISSUED BY THE DEPARTMENT OF AGRICULTURE.

BULLETINS.

Date Issued.	No.	Name.
May 21, 1901	8	Feeding Farm Animals (Dairy Cows).
Nov., 1908	25	Orchard Cleansing.
July 19, 1913	26	Practical Poultry-raising. (4th Edition.)
April, 1911	32	Control of Tuberculosis.
Feb., 1912	33	Fruit-growing Possibilities, Skeena River. (Reprint.)
Jan., 1912	35	Place and Purpose of Family Life.
Nov., 1911	36	Preparation of Food.
Feb., 1912	38	Construction of Silos.
Feb. 28, 1913	39	Natural and Artificial Incubation and Brooding. (3rd Ed.)
March, 1912	40	Alfalfa.
June, 1913	42	Apiculture in British Columbia.
May 7, 1912	44	Irrigation in British Columbia.
April 29, 1912	45	Agricultural Statistics, 1911.
Jan. 15, 1913	48	Exhibiting Fruit and Vegetables.
Sept. 3, 1913	49	Market Poultry. (2nd Edition.)
March 8, 1913	50	The Art of Right Living.
April 15, 1913	52	Annual Report Advisory Board of Women's Institutes.
Nov. 18, 1913	54	The British Columbia Women's Handbook.
Nov. 20, 1913	55	Care and Marketing of Eggs. (2nd Edition.)
Dec. 13, 1913	56	Field-crop Competitions, 1913.
March 9, 1914	57	Boys and Girls' Field-crop Competitions.
May 18, 1914	58	Farm Storage for Fruits and Vegetables.
Nov., 1914	59	Agricultural Statistics for Year 1913.
Jan. 15, 1915	60	Hog-raising.

AGRICULTURAL DEPARTMENT CIRCULARS.

Date issued.	No.	Name.
June 12, 1911	..	How to Grow Tobacco from Seed.
Dec. 4, 1912	2	Results of Field-crop Competitions, 1912.
1913	5	Results of Field-crop Competitions, 1913.
Oct., 1914	6	Gardening on a City Lot.

CIRCULAR BULLETINS.

April 29, 1913	2	Tuberculosis in Poultry. (2nd Edition.)
July 23, 1913	3	Construction of Fresh-air Brooders. (2nd Edition.)
Oct. 14, 1913	4	Management of Turkeys.
Dec. 13, 1913	5	Clover Dodder.
Feb. 24, 1914	6	Seed Improvement.
March 30, 1914	7	Keeping Poultry Free from Lice.
May 9, 1914	8	Corn.
Nov., 1914	10	The Care of Milk and Cream.

REPORTS.

Date issued.	Name.
May 9, 1913	Fourteenth Annual Report, Farmers' Institutes, 1912.
Sept. 5, 1913	Fourth Annual Report, Agricultural Fairs Association.
Sept. 22, 1913	Report of Meeting, British Columbia Entomological Society.
June, 1913	British Columbia Dairymen's Report.
Jan. 9, 1914	Second Egg-laying Contest.
Feb. 20, 1914	Second Annual Report, British Columbia Markets Commissioner.
March 31, 1914	Twenty-fourth Annual Report, British Columbia Fruit-growers' Association.

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